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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/774,018

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Beatrix Kottwitz

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EXAMINER

MOORE, WILLIAM W

ART UNIT

PAPER NUMBER

1656

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/774,018	<b>Applicant(s)</b> KOTTWITZ ET AL.	
	<b>Examiner</b> WILLIAM W. MOORE	<b>Art Unit</b> 1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 79-81 and 83-97 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 79-81 and 83-97 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

Applicant's Amendment filed 20 June 2008 canceling claim 82 and amending claims 79-81, 83, 84 and 97 has been entered. The claim amendments overcome the rejections of record of claims 79, 82, and 85-97 herein under 35 U.S.C. §§ 112, 102 and 103. Amended claims 81, 83, and 84 are rejoined with claims 79, 80 and 85-97 because the prior art applied in a new ground of rejection below that describes chimeric  $\alpha$ -amylases at least 98% identical to the elected amino acid sequence of SEQ ID NO:8 is equally applicable to the chimeric  $\alpha$ -amylases of SEQ IDs NOs:6 and 10 herein. Claims 79-81 and 83-97 remain in the application.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 USC § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 79-81, 83 and 84 are rejected under 35 USC § 103(a) as being obvious over Conrad et al., 1995, discussed above, in view of Mitchinson et al., of record.

This new ground of rejection is necessitated by Applicant's Amendment filed 20 June 2008. Applicant's arguments with respect to claims 79 and 80 in the Remarks accompanying the Amendment filed 20 June 2008 have been considered but are moot in view of the new ground of rejection. As noted above, claims 81, 83 and 84 are now included in this rejection because the subject matters of these three claims fall within the scope of claim 79 and may be rejected by the application of a teaching in the prior art applicable to all of claims 79-81, 83 and 84. Conrad et al. teach the preparation of a series of thirty-three different hybrid  $\alpha$ -amylases whereof twenty comprise an amino-proximal portion of the amino acid sequence of the *Bacillus amyloliquefaciens*  $\alpha$ -amylase set forth in SEQ ID NO:4 herein fused to a carboxyl-proximal the amino acid sequence of the *Bacillus licheniformis*  $\alpha$ -amylase set forth in SEQ ID NO:2 herein. See Figure 2 at page 484 and compare SEQ ID NO:2 herein with the upper line of the amino acid sequence alignment depicted in Figure 5 at page 487 and compare as well SEQ ID NO:4 herein with the lower line of the amino acid sequence alignment depicted in Figure 5. Conrad et al. further teach that three of their hybrid  $\alpha$ -amylases having fusion intersections at positions 34, 76, and 112 according to the numbering for SEQ ID NO:4 herein, see the AL34, AL76 and

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AL112 hybrid  $\alpha$ -amylases of Figure 2, thus are identical to SEQ IDs NOs:6, 8 and 10 herein and meet structural limitations of claims 79, 80, 81, 83 and 84 as amended herein. Conrad et al. also teach that these three hybrid  $\alpha$ -amylases have exceptional thermostability as measured by residual activity at 37°C after heat treatment at 90°C for either 15 minutes or 30 minutes. See results depicted for the AL34, AL76 and AL112 hybrid  $\alpha$ -amylases in Figure 3 at page 485.

Conrad et al. do not teach the preparation of a cleaning agent that comprises any of their  $\alpha$ -amylase fusion polypeptides, thus Mitchinson et al., of record, are now cited for their teaching of the formulation of a cleaning agent, which is a detergent composition, comprising an amylase having the amino acid sequence of their SEQ ID NO:34, which shares 96.7% sequence identity with SEQ ID NO:8 herein, together with other enzymes such as "endoglycosidases, proteases, lipases cellulases and other amylases". See col. 4, lines 20-36, and the paragraphs spanning col. 9, line 57, through col., 10, line 29, lines 24-33, and page 81, lines 9-15, of the specification, and claims 1 and 22-25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the exceptionally thermostable hybrid AL34, AL76 and AL112  $\alpha$ -amylases taught by Conrad et al. in a detergent composition/ cleaning agent of Mitchinson et al., because Mitchinson et al. teach that other amylases are advantageously incorporated in their cleaning composition and because such an artisan would have readily appreciated that the hybrid AL34, AL76 and AL112  $\alpha$ -amylases of Conrad et al. are appropriate components for such a cleaning composition in view of their exceptional thermostability.

Claims 85-97 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Conrad et al. and Mitchinson et al., as applied to claims 79-81, 83, and 84 above and further in view of Sadlowski et al., US 6,656,899, made of record herewith.

This new ground of rejection is necessitated by Applicant's Amendment filed 20 June 2008. Applicant's arguments at pages 7 and 8 of the Remarks accompanying the Amendment filed 20 June 2008 have been considered but are moot in view of the new ground of rejection. The teachings of Conrad et al. and Mitchinson et al. discussed above are taken as before. Sadlowski et al. teach the preparation of amylase-comprising liquid detergent compositions, i.e., cleaning agents, having both liquid and solid phases that comprise different enzymes, including one or more proteases, one or more amylases, one or more lipases, one or more cellulases, and one or more  $\beta$ -glucanases, wherein any enzyme may be present in a weight percentage range from "about 0.01% to about 5%", or at a range from "about 0,01 to about 3mg . . . per gram of composition" and that further comprises components – hydrotropes e.g., alkylethoxy sulfates – and a system of mechanical stabilization – the formation of solid prills – that stabilize enzymatic activity, such as amylolytic activity of amylases, or increase the contribution of

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enzymes, such as amylases, to the washing or cleaning performance of the agent. See col. 17, line 46, through col. 20, line 14. Sadlowski et al. additionally teach the preparation of further solid components that are "cleaning agents", just as enzyme prills are "cleaning agents", included in their compositions that are "cleaning agents", in the form of granules that comprises two solid phases, the outer encapsulating the inner, wherein one of the two solid phases of the granule is a starch that is susceptible to the amylolytic activity of an amylase permitting its decomposition upon dilution of the detergent composition in an aqueous wash solution in a method of, e.g., cleaning textiles, where the granules, "filler particles" are no longer needed in the aqueous environment of the wash solution. See cols. 3-17, and particularly col. 6, lines 42-52, and col. 7, lines 43-57.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add one or more of the exceptionally thermostable hybrid AL34, AL76 and AL112  $\alpha$ -amylase taught by Conrad et al. to a cleaning agent taught Sadlowski et al., within the ranges of representation for any enzyme therein taught by Sadlowski et al. which are within ranges recited in claim 85, where Sadlowski et al. teach that multiple forms any particular category of enzyme such as amylases may be incorporated. This is because Sadlowski et al. teach that the starch-degrading activity of amylases is advantageous for the proper utilization of their two-solid phase granules wherein one phase comprises starch, because Mitchinson et al. teach that multiple amylases are advantageously incorporated in a cleaning composition, and because such an artisan would have readily appreciated the advantage of incorporating one of the exceptionally thermostable hybrid AL34, AL76 and AL112  $\alpha$ -amylase taught by Conrad et al. in a cleaning agent of Sadlowski et al. It would have also obvious as well to such an artisan at that time to practice a method for cleaning, at least, textiles by cleaning the textile in an aqueous wash solution with a cleaning agent taught by Sadlowski et al. comprising one or more of the very thermostable hybrid AL34, AL76 and AL112  $\alpha$ -amylases taught by Conrad et al. where dilution of the cleaning agent in the wash solution would inherently result in a concentration of amylase therein within the range indicate in claim 95 and the cleaning agent of Sadlowski et al. comprises multiple phases. This is because Sadlowski et al. teach that such is the purpose of their cleaning agent and because such an artisan would have readily appreciated that the very thermostable hybrid AL34, AL76 and AL112  $\alpha$ -amylases taught by Conrad et al. would serve advantageously in such a method comprised in a cleaning composition of Sadlowski et al.

#### *Conclusion*

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William W. Moore whose telephone number is 571.272.0933 and whose FAX number is 571.273.0933. The examiner can normally be reached Monday through Friday between 9:00AM and 5:30PM EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisory Primary Examiner, Dr. Kathleen Kerr Bragdon, can be reached at 571.272.0931. The official FAX number for all communications for the organization where this application or proceeding is assigned is 571.273.8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571.272.1600.

/Nashaat T. Nashed/  
Nashaat T. Nashed, Ph. D.  
Supervisory Primary Examiner  
Art Unit 1652

/William Moore/  
23 September 2008